

MOVEMENT ACTIVITY AMONG PATIENTS DIAGNOSED WITH ALCOHOL DEPENDENCE SYNDROME

Magdalena Zawadzka, Maria Dziedziczak – Buczyńska, Andrzej Buczyński, Gabriela Henrykowska

Department of Epidemiology and Public Health, Medical University in Łódź, Poland

ABSTRACT

Frequent consumption of large amounts of alcohol usually does not correspond to regular physical activity. However, regular physical activity can lead to an improved well-being and greater satisfaction with life. The aim of the study was to determine the level of physical activity in the group of patients diagnosed with alcohol dependence syndrome and examine the correlation between these variables. The study was conducted among a selected group of individuals of both sexes, aged 22-65 and undergoing treatment. Our study indicated an absence of a correlation between gender and the level of physical activity among people addicted to alcohol. Moreover, no statistically significant relationship was found between alcohol dependence and physical activity undertaken in the researched group.

Keywords: alcoholism, movement activity.

ARTICLE INFO

PolHypRes 2017 Vol. 61 Issue 4 pp. 67 - 74

ISSN: 1734-7009 eISSN: 2084-0535

DOI: 10.1515/phr-2017-0024

Pages: 8, figures: 1, tables: 1

page **www** of the periodical: www.phr.net.pl

Typ artykułu: oryginalny
Original article

Submission date: 13.09.2017r.

Acceptance for print: 08.11.2017r.

Publisher

Polish Hyperbaric Medicine and Technology Society



INTRODUCTION

In recent years, regular physical activity has become an important element of life, having a beneficial effect on human health and well-being. Indeed, its favourable effects have been known for a long time.

The human body is accustomed to certain amounts of physical effort and thanks to it, it functions properly. Physical effort should be systematic, which has numerous advantages. It results in a number of highly beneficial changes in the circulatory, respiratory and skeletal systems. It strengthens the heart muscle, improves the blood flow in blood vessels, normalises blood pressure, increases the concentration of HDL cholesterol, reduces the concentration of LDL cholesterol and triglycerides, and reduces the risk of thickening and clotting of blood in blood vessels. Moreover, physical effort has a special effect on increasing muscle strength and immunity of the organism, it improves the functioning of the respiratory system and beneficially affects the general performance of the whole system. The positive impact of physical activity is particularly manifested in the psychological sphere – it leads to an improved well-being, reduced feelings of anxiety, reduction of depression, improvement of sleep and overall satisfaction with life [1,2].

Frequent consumption of large amounts of alcohol and regular physical activity are not compatible as alcohol consumed in excessive amounts to a large extent affects the body, physical performance and well-being causing dehydration, gastric problems, slower blood circulation, poor motor coordination, fatigue and a general lack of energy. Alcohol leads to vasodilatation, i.e. to the relaxation of smooth muscles located in the walls of blood vessels. This results in the widening of the vascular lumina and a drop in blood pressure, which in turn can lead to changes in the heart rate. Slower blood circulation translates into deteriorated efficiency during training [2,3].

In addition, long-term consumption of alcohol damages the nervous system and deprives addicted persons of the ability to control their reflexes and maintain concentration, which results in a reduced physical activity. Reduced motor coordination and insufficient ability to concentrate, even at a very low level of physical activity, results in decreased efficiency, increased effort and even a high risk of injury. Nerve damage, on the other hand, can cause numbness, twitching of the limbs and loss of control over particular parts of the body. Individuals with alcohol dependence syndrome can eventually experience a complete loss of coordination capacity. This condition is related to the effect of alcohol on GABA neurotransmitters which has an inhibitory effect on brain cells. Alcohol intensifies these properties of the transmitter, which leads to clumsiness and deceleration of reflexes [1,3].

The feeling of fatigue and reduced energy may be the result of dehydration, however there is another equally important factor, namely alcohol acts very depressingly. The feeling of sadness, tiredness, depression and lack of satisfaction often appears after drinking too much alcohol. The day following alcohol consumption the body fights the stressors caused by it, thus absorbing some of the energy. When combined with the remaining factors such as stomach problems, dehydration or total lack of concentration, taking up

physical activity becomes very difficult and sometimes even impossible [2,3].

However, there are people addicted to alcohol who prefer a healthy and physically active lifestyle. In some cases, practising sports gives the strength and determination to persevere in abstinence and allows them to find satisfaction in life.

During the treatment of alcohol dependence syndrome, physical activity may be a factor supporting effective therapy. Patients often struggle with depression, and physical activity gives excellent results in its elimination or prevention. Practising all kinds of sports not only positively affects the body or the figure, but it also has a significant impact on the mind, quality of life and perception of the world. Furthermore, it has a beneficial effect on shaping self-confidence, a positive system of values and a sense of mastery, which is usually lacking in alcoholics [4]. Thanks to physical activity, the transmission of impulses between nerve cells is improved, the secretion of endorphins and serotonin increases. Group sports additionally have the effect of improving mood and interpersonal relationships, which in turn constitutes a social support factor in the fight against addiction.

According to the researchers Paluska and Schwenk, the most effective exercises supporting the treatment of depression, and thus alcoholism include: stretching and aerobic exercises. In contrast to other exercises, in this case it is not the size and intensity of the effort that matter, as it would only negatively burden the cardiovascular system, but the very fact of taking up even the smallest physical activity in order to strive to improve one's quality of life. A lot of attention should also be paid to regularity of the exercises. To sum up, sport as a prophylactic factor has a large impact on improving the patient's condition. In the case of diagnosing the disease, psychotherapy combined with activity and, if necessary, with additional pharmacology, result in the most effective treatment process [4].

In turn, according to data from American studies in New Zealand, alcohol consumption by athletes is much higher than that of non-training peers. Such a situation is probably due to very hard work before important events, including the associated emotional tension, stress and the later desire to celebrate victory or cope with the failure suffered by athletes [5,6]. For some people, alcohol becomes the "support measure" in overcoming some barriers, especially mental ones, when taking up various forms of physical activity. This kind of behaviour may cause accidents and serious health consequences, as is the case with e.g. diving or climbing.

Unfortunately, there are very few studies on physical activity among people addicted to alcohol and their satisfaction with life. Therefore, the collected research material is to determine the relationship between a person with alcoholism and his/her approach to practising any kind of physical activity and shaping the level of life satisfaction. The results obtained may contribute to demonstrating the mechanism of alcohol dependence as an unfavourable factor when it comes to practising sports and showing that sports may in fact constitute an alternative to escape from problems and worries accompanying alcoholics. Based on the information obtained from the literature a positive correlation between physical activity at a high or moderate level and a high level of life satisfaction can be expected.

OBJECTIVE

The aim of the study was to determine the level of physical activity in the group of patients diagnosed with alcohol dependence syndrome and examine the correlation between these variables.

MATERIAL AND METHODS

The study was carried out with the consent of the Bioethics Commission at the Addiction Treatment Ward in the Regional Addiction Treatment Centre at the J. Babinski Hospital in Łódź, among 50 patients of both sexes with a diagnosed alcohol addiction syndrome. The age range was between 22 and 65 years. 21 women and 29 men were examined.

The criterion for inclusion of patients in the study was the diagnosis of alcohol dependence syndrome (F10.2) and the participant's written consent to take part in the study. The criterion excluding the patient from the study was the lack of consent for participation in a given study and an occurrence of serious somatic, neurological or physical disability. Moreover, patients had the right to refuse their participation and withdraw the consent to participate in the study, at any time without giving any reason or suffering any consequences.

One of the research tools used in the study was the MAST test – a diagnostic questionnaire for alcohol addiction syndrome, which assesses the severity of existing addiction. The test consists of 24 yes/no questions. Obtaining a result exceeding 5 points by an examined person indicates the presence of alcohol dependence syndrome, whereas the score below 3 points excludes this condition [7].

The International Physical Activity Questionnaire (IPAQ) was used to assess the level of physical activity. It consists of five independent parts related to physical activity connected with work, mobility, housework, recreation, sport and physical activity in leisure time. The result of physical activity is defined in MET units [8].

Statistical analysis was carried out in the STATISTICA 12 PL programme. Continuous variables are described by their minimum, maximum and average

values with a standard deviation. Appropriate tests were used to verify the statistical hypotheses, selected based on the type of variables. The student's t test was used for comparisons between the two independent groups. In order to evaluate the relationship between two continuous variables, Pearson's correlation coefficient was used, and the significance level was assumed to be at $\alpha = 0.05$.

RESULTS

Among the respondents, 27 ($f = 0.54$) declared vocational or secondary education, while 18 ($f = 0.36$) had higher education, five respondents ($f = 0.1$) had no or primary education. In the study group consisting of people addicted to alcohol, almost half ($N = 23$, $f = 0.46$) had a permanent job or ran an independent business. Every fifth respondent ($N = 11$, $f = 0.22$) worked part-time, whereas another eleven people ($f = 0.22$) declared receiving a social benefit or using social assistance and having other similar sources of income. Few respondents ($N = 3$, $f = 0.06$) were retired or dependent on the family ($N = 2$, $f = 0.04$).

Almost half of respondents ($f = 0.44$, $N = 20$) declared consumption of more than 20 units of alcohol per week. Another 15 people ($f = 0.3$) rated the amount of alcohol consumed at 11-20 units per week. 7 respondents ($f = 0.14$) drank between 2 and 5 units during any given week, while the consumption of 1 unit or less during the week concerned 2 people ($N = 0.04$).

Based on the results of the IPAQ questionnaire, it was established that in more than half of the people from the studied population, i.e. $N = 28$, $f = 0.56$, the level of physical activity was low. In the case of every fourth respondent ($N = 20$, $f = 0.4$), the level of physical activity was rated as average, while only a few ($N = 2$, $f = 0.04$) showed a high level of physical activity. In addition, in the study group, the average value of the IPAQ score (reflecting the level of physical activity) amounted to 680.34 in the case of men and 671.90 in the case of women. This difference was not statistically significant ($p = 0.93$).

Tab.1

Descriptive statistics for continuous variables in the studied group of people addicted to alcohol. The presented values include the minimum (Min), maximum (Max) and mean (M) values with standard deviations (SD).

| Variable | MIN | MAX | M | SD |
|--------------------|--------|---------|--------|--------|
| age | 22.00 | 65.00 | 41.86 | 12.36 |
| addiction duration | 1.00 | 28.00 | 8.00 | 6.94 |
| IPAQ result | 260.00 | 1560.00 | 676.80 | 299.81 |
| MAST result | 1.00 | 52.00 | 28.42 | 12.38 |

In the researched group of alcohol-dependent individuals, the correlation between the MAST result and the IPAQ questionnaire was negative, negligible and statistically insignificant ($R = -0.055$, $p = 0.707$).

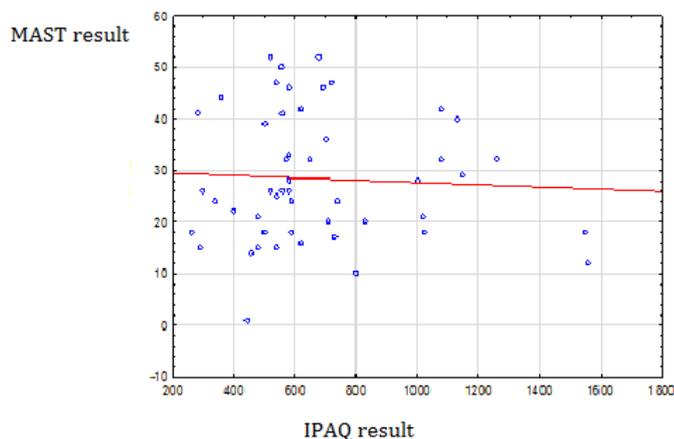


Fig. 1 The spread of results of the Michigan Alcoholism Screening Test (MAST) questionnaire in relation to the International Physical Activity Questionnaire (IPAQ) in the study group of people addicted to alcohol.

DISCUSSION AND CONCLUSIONS

The aim of the study was to determine the influence of the severity of addiction among the studied group of patients on the level of physical activity. In the own study, the comparison of the results of the MAST questionnaire with the results of the IPAQ questionnaire did not reveal a correlation between these two features ($R = -0.055$, $p = 0.707$). In turn, the American Medical Association reports that alcoholism, and especially its severity, has a significant impact on the development of physiological, somatic and mental disorders, which definitely hinder the achievement of a high level of physical activity, inter alia, due to disorders in sensory perception and movement, peripheral neuropathy, cognitive impairment, dementia. These and many other ailments related to alcoholism form the basis for the absence of any kind of physical activity [9]. On the other hand, no correlation in this respect was found in the given group of patients which is somewhat rare in science.

Szukalski confirms the fact that physical activity has a beneficial effect on mental health, reduces anxiety, prevents depression, and in particular improves the emotional state [10]. Sobolewski also mentions that physical activity taken up at an early age is important for proper mental development to cope best with various problems in life and maintain its quality at a high level [11].

Derbis defined that individuals fulfilling themselves in various areas of life, e.g. in sports, thereby externalises its quality [12]. In turn, for Dziurawicz-Kozłowska, the quality of life primarily refers to the presented level of physical fitness and general physical

state, mental state, economic conditions of a given society and somatic sensations [13].

Our study indicated no correlations between gender and the level of physical activity among people addicted to alcohol ($p=0.93$). Woronowicz, on the other hand, states that alcohol problems are much less common in women than in men. Among those treated, female cases are 2.5-3 less frequent [14]. Unfortunately, in recent years it has been observed that the number of addicted women is increasing.

According to modern studies characterised also by Woronowicz, it is revealed that between 50 and 60% of both women and men are exposed to the alcohol addiction syndrome, which is mainly determined genetically [15]. The PARPA data show us that among adult Poles, 25% reach for alcohol at least once a week. In this case, men account for 38% whereas women for over 10% [16]. Such behaviour can contribute to an increased number of accidents during sports. Many authors draw attention to alcohol as a factor predisposing to the occurrence of decompression sickness [17]. Therefore, it is forbidden to perform dives after consuming alcohol.

Physical activity is undoubtedly a necessary element in our lives. It is also important in eliminating many diseases, and in some cases, it is an excellent element of the recovery process. Taking up various forms of physical exercise gives the opportunity to meet new people, and thus allows one to feel more confident in social contacts, which is very important in addiction therapy. However, one should also remember about certain limitations in undertaking physical activity. They may result from the treatment of certain diseases and the applied pharmacotherapy, which may preclude, for instance, practising motor sports or diving.

REFERENCES

1. Frąckowiak M, Motyka M. Alcohol dependence syndrome: characterisation, stages of development, diagnosis. *Probl Hig Epidemiol* 2015;96(2):315-320;
2. Ryszkowski A, Wojciechowska A, Kopański Z, Brukwicka I, Lishchynskyy I, Mazurek M. Alcohol abuse: symptoms and outcomes. *Journal of Clinical Healthcare* 2015;1:2-6;
3. Jankowski MM, Ignatowska-Jankowska B, Kumański K, Witek B, Świergiel AH. The effect of alcohol on immunological system – research review. *Alcoholism and drug abuse* 2013;26(1):37-53;
4. Paluska SA, Schwenk TL. Physical activity and mental health: current concepts. *Sport Medicine* 2000;29(3):167-180;
5. O'Brien KS, Blackie JM, Hunter JA. Hazardous drinking in elite New Zealand sports people. *Alcohol and Alcoholism* 2005;40:239-241;
6. Garry JP, Morrissey SI. Team sports participation and risk-taking behaviours among a biracial middle school population. *Clinical Journal of Sports Medicine* 2000;10:185-190;
7. Bielski J. Methodology of physical and health educations. *Oficyna Wydawnicza Impuls, Cracow* 2015;46-58;
8. Biernat E, Stupnicki R, Gajewski A. International Physical Activity Questionnaire (IPAQ) – Polish version, *Wychowanie Fizyczne i Sport, Warsaw* 2007;51(1):47-54;
9. Blair SN, Hardman A. Special issue: Physical activity, health and well-being - an international scientific consensus conference. *Research Quarterly for Exercise and Sport* 1995;66(4);

10. Szukalski W. Health benefits of physical activity. *Lider*, 2001;1:15-16;
11. Sobolewski P. Physical activity among youth and their satisfaction with physical education classes. *Wychowanie Fizyczne i Zdrowotne*, 2003;1:36-37;
12. Derbis R. Everyday life experience. Wydawnictwo Wyższej Szkoły Pedagogicznej, Częstochowa 2000;
13. Dziurawicz - Kozłowska A. Around the quality of life definition. *Psychologia Jakości Życia*, 2002;1(2):77-96;
14. Woronowicz BT. Alcoholism as a disease. PARPA, Warsaw 1993;
15. Woronowicz BT. Health problems. Addictions. Genesis, therapy, recovery. Parpamedia, Warsaw 2009;
16. Zgliczyński WS. Alcohol in Poland. *Biuro Analiz Sejmowych, INFOS zagadnienia społeczno-gospodarcze*, 2016;11(215):1-4;
17. Kierznikowicz B. Wolański W. Filipek B. Severe decompression sickness in a diver in the course of a training dive. *Polish Hyperbaric Research*, 2(55), 2016.

dr n. med. Magdalena Zawadzka
Zakład Epidemiologii i Zdrowia Publicznego UM w Łodzi
ul. Żeligowskiego 7/9
90-752 Łódź
email: magdalena.zawadzka@umed.lodz.pl